



EXHIBIT N

AMENDED EXHIBIT G**Infringement of U.S. 9,568,712 by the Apple iPhone X, iPhone XS, and iPhone XS Max**

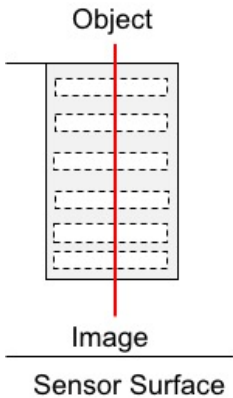
Apple Inc. (“Apple”) infringes Claims 1, 12, and 13, of U.S. Pat. No. 9,568,712 (the “’712 patent”) by making, using, selling, and/or offering for sale the Apple iPhone X, iPhone XS, and iPhone XS Max mobile devices (the “Accused Products”).¹

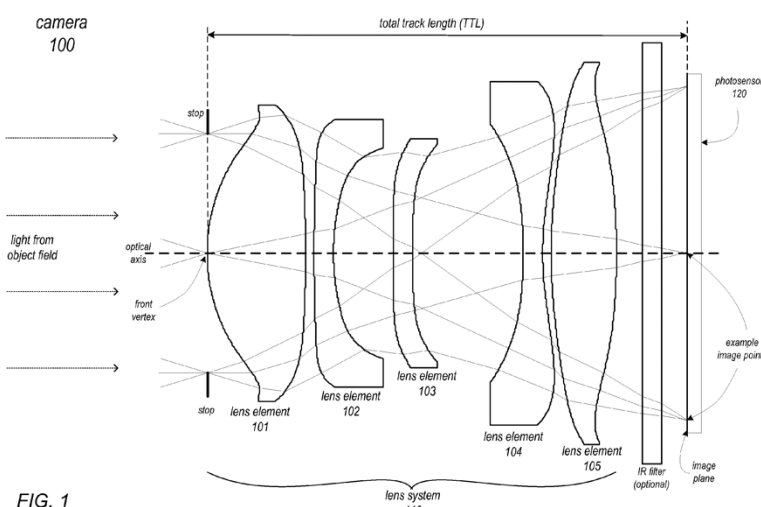
Claim	Claim Element	Accused Product
1.[a]	A lens assembly, comprising:	<p>To the extent that the preamble is considered to be a limitation, each of the Accused Products has a rear dual-aperture camera with two modules. Apple describes these modules as wide-angle and telephoto cameras.</p> <p><i>See, e.g.,</i> Apple iPhone X Specifications, https://www.apple.com/iphone-x/specs/.</p>

¹ These Infringement Contentions are preliminary, and they are based on information reasonably available to Corephotronics at this time. By presenting this early disclosure of its infringement contentions pursuant to the Patent Local Rules, Corephotronics does not waive any evidentiary objections or applicable privileges, including work product, with respect to the information disclosed. Corephotronics is not presenting these infringement contentions as a proffer of the facts of infringement, rather only as an exemplary illustration of the theories underlying its infringement contentions in this case. Discovery has only recently opened in this case, Apple has not produced any documents describing the accused functionalities, and Corephotronics’ investigation is ongoing. Corephotronics reserves the right to modify its infringement contentions as the case progresses. Corephotronics further reserves the right to supplement, modify, or seek to amend its infringement contentions consistent with applicable Local Rules and Court Orders.

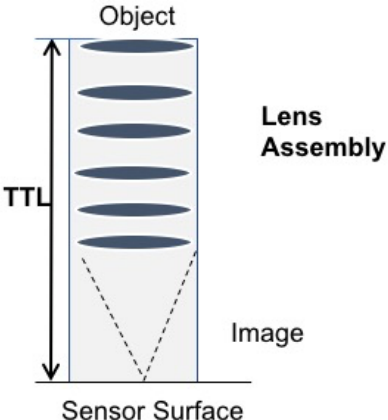
Claim	Claim Element	Accused Product
		<div><div>iPhone X</div><div>Overview iOS Tech Specs</div><div>Finish</div><div><div><div>Space Gray</div></div><div><div>Silver</div></div></div><div><div>Camera</div><div>12MP wide-angle and telephoto cameras Wide-angle: $f/1.8$ aperture Telephoto: $f/2.4$ aperture Optical zoom; digital zoom up to 10x</div></div><div><div>See, e.g., “iPhone Xs and iPhone Xs Max technical specifications,” https://www.apple.com/iphone-xs/specs/.</div></div></div>

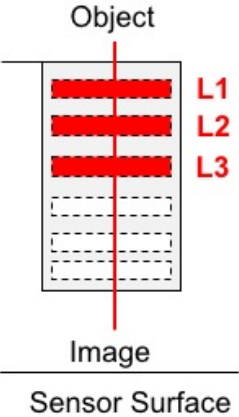
Claim	Claim Element	Accused Product
		<div><div>iPhone XS - Technical Specifications - Apple</div><div><div><div><div><div><div>Apple</div><div>Mac</div><div>iPad</div><div>iPhone</div><div>Watch</div><div>TV</div><div>Music</div><div>Support</div><div>Q</div><div></div></div></div><div><div>iPhone XS</div><div>Display</div><div>Face ID</div><div>A12 Bionic</div><div>Cameras</div><div>Only iPhone</div><div>Tech Specs</div><div>Buy</div></div></div></div><div><div>iPhone Xs</div><div>iPhone Xs Max</div></div></div><div><div>...</div><div><div>Camera</div><div>Dual 12MP wide-angle and telephoto cameras</div><div>Wide-angle: $f/1.8$ aperture</div><div>Telephoto: $f/2.4$ aperture</div><div>2x optical zoom; digital zoom up to 10x</div><div>Portrait mode with advanced bokeh and Depth Control</div><div>Portrait Lighting with five effects (Natural, Studio, Contour, Stage, Stage Mono)</div><div>Dual optical image stabilization</div><div>Six-element lens</div><div>Quad-LED True Tone flash with Slow Sync</div><div>Panorama (up to 63MP)</div><div>Sapphire crystal lens cover</div><div>Backside illumination sensor</div><div>Hybrid IR filter</div><div>Autofocus with Focus Pixels</div></div></div></div>

Claim	Claim Element	Accused Product
1.[b]	a plurality of refractive lens elements arranged along an optical axis,	<p>Because the telephoto camera of each Accused Product is substantially similar in dimensions, shape, and other optical properties, the following claim limitations are met by each Accused Product in the same manner.</p> <p>The telephoto camera of the Accused Product, among other things, contains refractive lens elements arranged along an optical axis, as illustrated in the exemplary schematic below.</p>  <p>The diagram is a schematic of an optical system. At the top, the word 'Object' is centered above a horizontal line. A vertical red line, representing the optical axis, passes through the center of a series of five rectangular lens elements. These elements are stacked vertically and each contains a dashed horizontal line. Below the lens elements, the word 'Image' is centered above another horizontal line. At the bottom, the words 'Sensor Surface' are centered below a final horizontal line. The entire optical axis is represented by a continuous vertical red line passing through the center of all components.</p>

Claim	Claim Element	Accused Product
1.[c]	wherein at least one surface of at least one of the plurality of lens elements is aspheric,	<p>At least one surface of one of the plurality of lens elements in the lens assembly contained in the Accused Product, has an aspheric shape or profile. <i>See, e.g.</i>, a lens assembly that includes one or more aspheric lenses disclosed in Apple's U.S. Patent No. 9,223,118.</p>  <p>FIG. 1</p>
1.[d]	wherein the lens assembly has an effective focal length (EFL), a total track length (TTL) of 6.5 millimeters or less and a ratio TTL/EFL of less than 1.0,	<p>The telephoto camera of the Accused Product contains the said lens assembly within a total track length, i.e., TTL of the lens assembly, which can be estimated as shown in the exemplary schematic below.</p>

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Claim	Claim Element	Accused Product
		 <p>An estimate of the TTL for an exemplary lens assembly contained in the Accused Product is less than approximately 5.8 mm, which is less than 6.5 mm.</p> <p>The effective focal length, i.e., EFL, for this exemplary lens assembly in the Accused Product is greater than approximately 5.9 mm.</p> <p>Accordingly, the exemplary lens assembly has a TTL to EFL ratio of less than 5.8 mm to greater than 5.9 mm, which is less than 1.0.</p>
1.[e]	and wherein the plurality of lens elements comprises, in order from an object side to an image side, a first lens element with a focal length f_1 and positive refractive power, a second lens	<p>The refractive lenses in the lens assembly contained in the telephoto camera of the Accused Product are arranged from the object side (i.e., facing out of the camera) to the image side (i.e., towards the sensor inside the camera), whereby the first lens on the object side has a positive refractive power (i.e., inverse of a positive focal length), the next lens in sequence (i.e. the second lens) has a negative refractive power (i.e. inverse of a negative focal length), and the next lens in sequence (i.e. the third lens) is a lens element with a focal length. These lenses are identified as L1, L2, and L3 in the exemplary schematic shown below.</p>

Claim	Claim Element	Accused Product
	element with a focal length f_2 and negative refractive power and a third lens element with a focal length f_3 ,	
1.[f]	the focal length f_1 , the focal length f_2 and the focal length f_3 fulfilling the condition $1.2 \times f_3 > f_2 > 1.5 \times f_1$.	The focal lengths of the lenses indicated as L1, L2, and L3, <i>e.g.</i> , as identified for element 1.[e] above, are, respectively greater than approximately 3.1, approximately around -8.3, and less than approximately -10. These lenses satisfy the condition, by way of example, approximately, $1.2 \times f_3 > f_2 > 1.5 \times f_1$, <i>e.g.</i> , $((1.2 \times 10) > 8.3 > (1.5 \times 3.1))$ or $(12 > 8.3 > 4.65)$.
12.	The lens assembly of claim 1, wherein the first lens element has an Abbe number greater than 50 and the second lens element has an Abbe number smaller than 30.	In the lens assembly containing a plurality of lens elements, identified in elements 1.[a] <i>et seq.</i> above, the first lens from the object side, identified as L1, <i>e.g.</i> , for element 1.[e] above, has an Abbe number greater than 50, and the second lens, identified as L2, <i>e.g.</i> , for element 1.[e] above, has an Abbe number less than 30.
13.[a]	The lens assembly of claim 12, wherein the first lens element has a convex object-side surface and a convex or	In the lens assembly containing a plurality of lens elements, identified in elements 1.[a] <i>et seq.</i> above, the first lens identified as L1, <i>e.g.</i> , for element 1.[e] above, has a surface facing the object side that has a convex shape relative to the arrangement of the optical axis, the object side, and the image side, and a surface on the image side that has either a convex or concave shape.

Claim	Claim Element	Accused Product
	concave image-side surface and	
13.[b]	wherein the second lens element is a meniscus lens having a convex object-side surface.	In the lens assembly containing a plurality of lens elements, identified in elements 1.[a] <i>et seq.</i> above, the second lens identified as L2, <i>e.g.</i> , for element 1.[e] above, is a meniscus lens, and that lens' surface facing the object side has a convex shape.